Designing Designs

Daniela Nikolova-Popova
Bulgarian Academy of Sciences and Florida Atlantic University
nikolova20032003@yahoo.com

(joint work with Reinhard Laue)

Interesing groups often occur as automorphism groups of some combinatorial objects. One may use these objects to obtain a representation of the constructed designs. Our combinatorial objects are graphs.

Representing a design graphically may make certain properties of a combinatorial design obvious that otherwise would require tedious reasoning. This holds for symmetries, resolvability, and sub-design inclusion in appropriate cases. We describe how a graphical representation can be achieved in many cases and show several examples.

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